

REMARKS

I. Formalities

Applicant thanks the Examiner for acknowledging the Request for Reconsideration filed on January 30, 2006 and for indicating that the finality of the previous Office Action has been withdrawn.

Applicant also thanks the Examiner for initialing and returning a copy of the form PTO-1449 submitted with the Information Disclosure Statement filed on December 15, 2005.

II. Status of the Application

By the present amendment, Applicant amends claims 1-20 and 30-31, and adds claim 32 to more fully cover various implementations of the invention. Claims 1-28 and 30-32 are all the claims pending in the Application. Claims 1-28, 30 and 31 have been rejected.

The present amendment addresses each point of objection and rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

III. Objections to the Specification Under 35 U.S.C. § 132(a)

The Examiner has objected to the specification, alleging that the Amendment filed on December 29, 2005 under 35 § U.S.C. 132(a) introduces new matter into the disclosure. In particular, the grounds of rejection allege that the amended equation with the number "0.000291" is not explicitly stated in the specification and that, therefore, this added material is allegedly not supported by the original disclosure. Applicant respectfully traverses this objection for *at least* the reasons set forth below.

The amended equation, including the number “0.000291” is fully supported by the originally filed specification. The MPEP makes it clear that “[a]mendments to an application which are supported in the original description are NOT new matter.” (MPEP §2163.07). The MPEP also specifies that “[t]he mere inclusion of dictionary or art recognized definitions known at the time of filing an application would not be considered new matter.” (MPEP §2163.07). Further, the MPEP states that the “a rewording of a passage where the same meaning remains intact is permissible.” (MPEP §2163.07).

In the present application, the 08/29/05 Office Action alleged that the phrase “ $\tan(1^\circ)$,” as recited in several of the pending claims, was confusing and specifically requested that “the explicit definition needs to be stated in the claims.” (08/29/05 Office Action, page 3). In response to the Examiner’s allegations, Applicant clearly explained in the Amendment under 37 C.F.R. § 1.116, which was filed on December 29, 2005, that the meaning of the rudimentary trigonometric function “tan” is readily discernable by one of ordinary skill in the art. (12/29/05 Amendment, pages 12-13). Specifically, the tan of any angle θ , is equal to the $\sin \theta / \cos \theta$.¹

Indeed, the requirement to “distinctly” claim the invention under 35 U.S.C. § 112 means only that the claim must have a meaning discernible to one of ordinary skill in the art when construed according to correct principles. (MPEP §2173.02). And, only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction should an Examiner declare it indefinite. (See MPEP §2173.02).

¹ http://en.wikipedia.org/wiki/Trigonometric_function

Additionally, Applicant pointed out in the 12/29/05 Amendment that the meaning of “1’” is also readily discernable by one of ordinary skill in the art. In particular, one of ordinary skill would easily recognize that, in geometry, the reference character “1’” refers to an angle of 1 minute, wherein a minute is a unit of an angle equal to $1/60^{\text{th}}$ of a degree.² Indeed, this meaning is supported in numerous instances throughout the originally filed specification. (*See e.g.*, page 9, lines 12-14; page 11, lines 24-26; page 18, lines 3-5; page 18, lines 19-22; page 19, lines 1-5).

Despite the fact that one of ordinary skill in the art would have easily discerned the meaning the phrase “tan(1’),” and that this phrase thereby satisfied the requirements of 35 U.S.C. § 112 (*see e.g.*, Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354, 1366, 71 USPQ2d 1081, 1089 (Fed. Cir. 2004)), in order to expedite prosecution of this application, and in accordance with the Examiner’s specific request that “the explicit definition needs to be stated in the claims,” Applicant nevertheless amended the claims to recite the explicit numerical definition of the phrase “tan(1’),” which is 0.000291. In other words, the value of “tan(1’)” = 0.000291 (i.e., the tan of $1/60^{\text{th}}$ of a degree = 0.000291). What is more, Applicant submits that one of ordinary skill in the art would readily discern that the number 0.000291 is merely the explicit numerical definition of the phrase “tan(1’).”

² <http://en.wikipedia.org/wiki/Minute>

Accordingly, since Applicant's mere rewriting of the phrase "tan(1°)" in numerical form is simply the inclusion of the art recognized definition of the phrase "tan(1°)" known at the time of filing the present application, and is at the very most nothing more than a simple rewording of a passage where the same meaning remains intact, such amendments are permissible and are not properly considered new matter under the requirements of MPEP §2163.07. As such, Applicant respectfully requests that the Examiner withdraw this objection for *at least* these reasons.

The grounds of rejection allege further allege that the number 0.000291, as recited in the pending claims, is not explicitly stated in the specification. In doing so, the Examiner seems to be requiring a *verbatim* recitation of the specific number "0.000291" in the specification. This is not the law. As clearly explained in MPEP § 2163 (I)(B), there is no *in haec verba* requirement. To the contrary, newly added features can be supported through express, implicit, or inherent disclosure in the specification.

IV. Claim Rejections Under 35 U.S.C. § 112

The Examiner has objected to claims 1-2, 5-12, 21-22, 25 and 26 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner states that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant respectfully traverses these rejections for *at least* the reasons stated below.

With respect to the rejections based on the phrase "forming a left line segment and a right line segment wherein said line segments are perpendicular to a first direction," claims 1 and 2

have been amended to delete this phrase. As such, the Examiner's rejections in this respect are now moot.

Further, with respect to the recitation of the phrase "0.000291" recited in the pending claims, the grounds of rejection allege that the number 0.000291 is not explicitly stated in the specification. However, to satisfy the written description requirement, the MPEP only requires that Applicant convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention." (MPEP §2163.02). In order to comply with the written description requirement, the specification "need not describe the claimed subject matter in exactly the same terms as used in the claims; it must simply indicate to persons skilled in the art that as of the [filing] date the applicant had invented what is now claimed." (Dental Prodx, LLC v. Advantage Dental Prods., 309 F.3d 774, 779; 64 USPQ2d 1945, 1950 (Fed. Cir. 2002)). Indeed, the MPEP explicitly states that "[t]he subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement." (MPEP §2163.02).

The Examiner has the initial burden, after a thorough reading and evaluation of the content of the application, of presenting evidence or reasons why a person skilled in the art would not recognize that the written description of the invention provides support for the claims. (MPEP § 2163). Here, contrary to the requirements of the MPEP, the Examiner has failed to present any evidence or reasons as to why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims. (*See* MPEP § 2163.04).

Therefore, Applicant respectfully requests that the Examiner withdraw these rejections for *at least* these reasons.

V. Claim Objections

The Examiner has objected to claims 1, 5-8, 21, 25, 2, 9-12, 22, 26 and 4, 17-20, 24, 28 and 30-31 alleging minor informalities.

First, with respect to the Examiner's objections to claims 1 and 2 based on the phrase "...forming a left line segment and a right line segment wherein said line segments are perpendicular to a first direction..." claims 1 and 2 have been amended, as set forth above, to delete this phrase. As such, the Examiner's objections in this regard are now moot.

Second, the Examiner has also objected to claim 2, alleging that the phrase "a distance between the surface of said optical unit and a line segment ... in said first direction ... is set to a distance OD (mm)" is indefinite. Moreover, the Examiner has requested that the recited "distance OD" should be referred to as "normal distance." In accordance with the Examiner's request, Applicant has amended claim 2, as set forth above, to recite "a normal distance between ~~the~~ surface of said optical unit and a line segment... is set to a normal distance OD (mm)." Since the informalities noted by the Examiner have been corrected, Applicant respectfully requests that the Examiner withdraw this objection.

Third, the Examiner has objected to claims 2 and 4 alleging that the phrase "0.000291" recited therein is indefinite since the claims fail to give definition and physical meanings to the phrase to make the scopes of the claims clear. More particularly, the Examiner alleges that the explicit definition of the phrase "0.000291" needs to be stated in the claims since the number

“0.000291” is regarded as an arbitrary number. Applicant respectfully traverses this objection for *at least* the reasons set forth below.

The recitation of the phrase “0.000291” is sufficiently definite in accordance with the requirements of 35 U.S.C. § 112, second paragraph, which requires only that the claims “particularly point[ing] out and distinctly claim[ing] the subject matter which the applicant regards as his invention.” MPEP § 2173.02 explains that the requirement to “distinctly” claim means that the claim must have a meaning discernible to one of ordinary skill in the art when construed according to correct principles. (MPEP §2173.02). Further, only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction should the Examiner declare it indefinite. (*See* MPEP §2173.02).

Contrary to the allegations in the grounds of rejection, the phrase “0.000291” is not an arbitrary number. Rather, one of ordinary skill in the art would readily discern that the phrase “0.000291” is merely the explicit numerical definition of the phrase “ $\tan(1')$.” And, as explained in the present specification, for instance, “by setting the lens pitch L to twice or less the product of the distance OD and the tangent of an angle of 1 minute... the width of the light portion and the dark portion in the striped patterns that occur in the three-dimensional image is set no more than the resolution of the viewer when the distance between the viewer and the optical unit is 350 mm or less and the viewer’s eyesight is 1.0.” (Page 9, lines 12-24). Further, as a result of setting the lens pitch L to twice or less the product of the distance OD and the tangent of an angle of 1 minute, “the viewer cannot recognize the striped patterns, and the reduction of a display image quality caused by using lenses having unevenness on surface is prevented.” (Page 9, lines

24-27). Thus, the present specification makes it clear that the phrase “0.000291” is not an arbitrary number, rather, it is a number with precise physical meaning which is selected to prevent the reduction of display image quality caused by using lenses having unevenness on their surfaces.

Since the phrase “0.000291” has a meaning which is readily discernable by one of ordinary skill in the art, and since the meaning of the phrase “0.000291” does not remain insolubly ambiguous without a discernible meaning after all reasonable attempts at construction, the phrase is not indefinite and the Examiner’s rejection in this regard should be withdrawn.

Fourth, the Examiner has objected to claim 30, alleging that the phrase “forming a perpendicular line segment,” is confusing and indefinite. Since claim 30 has been amended, as set forth above, to delete this phrase, the Examiner’s objection in this regard is now moot.

Fifth, the Examiner has objected to the phrase “the perpendicular distance from a most peripheral line segment out of line segments at the surface of said optical unit to the plane of the viewer’s eyes, is set to a distance OD (mm),” as recited in claim 31. Specifically, the Examiner alleges that it is not clear that the term “perpendicular” is measured with respect to what. Since claim 31 has been amended, as set forth above, to delete the term “perpendicular,” the Examiner’s objections in this regard are now moot.

The Examiner also objects to claim 31, alleging that it is not clear what is considered to be the “most peripheral line segment ... at the surface of said optical unit.” Since claim 31 has been amended, as set forth above, to delete the phrase “a most peripheral line segment...,” the Examiner’s objections in this regard are now moot.

Thus, Applicant respectfully requests that the Examiner withdraw the above objections. In addition, Applicant requests that the Examiner withdraw the objections with respect to claims 5-8, 21, 25, 9-12, 22, 26 and 17-20, 24, 28 since the objections of their respective base claims are either moot, or the informalities noted by the Examiner have been corrected, as a result of the above amendments.

VI. Claim Rejections Under 35 U.S.C. § 103

A. Momochi in view of Sandor

The Examiner has rejected claims 1, 5, 6 and 30 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,528,420 to Momochi (hereinafter “Momochi”), in view of U.S. Patent No. 5,554,432 to Sandor, *et al.* (hereinafter “Sandor”). Applicant respectfully traverses this rejection.

Momochi teaches an image outputting apparatus wherein picture element data are outputted to the thermal head 106 of a sublimation type printer and are printed onto a lenticular lens sheet. (Column 5, lines 31-37; column 6, lines 46-49; Figure 2). Thus, Momochi teaches that refracted light is incident upon the picture elements B and C, and then is reflected by the picture elements B and C toward the left eye and right eye of the viewer, respectively. (Column 11, lines 24-55; Figures 10-11 and 13).

The Examiner acknowledges that Momochi fails to teach or suggest the feature of “wherein a lens pitch of said optical unit is less than 0.2 mm,” as recited in claims 1 and 30. Nevertheless, the grounds of rejection apply the cited Sandor reference, alleging that Sandor teaches a lenticular lens sheet wherein the lens pitch ranges between 0.169 mm to .102 mm.

Further, the grounds of rejection allege that it would have been obvious to one of ordinary skill in the art to modify the image outputting apparatus of Momochi, with the lenticular image sheet of Sandor, to arrive at the recitations in claims 1 and 30, and that the motivation for doing so would be for the benefit of making the image outputting apparatus of Momochi “capable of being made to have a size that is possibly being handheld and being applied into portable devices for viewing stereoscopic images in portable and handheld devices.”

Applicant respectfully disagrees with the grounds of rejection. In response to Applicant’s previous arguments advanced in the Amendment under 37 C.F.R. §1.116, which was filed on December 29, 2005, the grounds of rejection allege that “[t]he claimed equations and conditions are inherent properties of ANY stereoscopic image display device using a lenticular screen.” (04/04/06 Office Action, page 13). Applicant vigorously disagrees with this baseless allegation. The assertion that any stereoscopic image display device using a lenticular screen has the inherent property of the claimed “lens pitch of said optical unit is less than 0.2 mm,” for instance, as recited in claims 1 and 30, is unsupported in fact and/or reasoning.

Indeed, the Examiner explicitly acknowledges that the display taught in Momochi fails to teach or suggest the feature of a “lens pitch of said optical unit is less than 0.2 mm.” Thus, Momochi is admittedly one example of a stereoscopic image display device that admittedly does not have, as inherent properties thereof, the claimed conditions and equations (i.e., a “lens pitch of said optical unit is less than 0.2 mm”). If the Examiner elects to persist in these grounds of rejection, Applicant requests that the Examiner provide the requisite evidentiary support for the bald allegation that “[t]he claimed equations and conditions are inherent properties of ANY

stereoscopic image display device using a lenticular screen.” It is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. (*In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). This burden can only be satisfied by an objective teaching in the prior art or by cogent reasoning that the knowledge is available to one of ordinary skill in the art. (See *In re Lulu*, 747 F.2d 703, 223 U.S.P.Q. 1257 (Fed. Cir. 1984)).

Further, the grounds of rejection allege that “the geometry for allowing the stereoscopic viewing does not change whether the image is presented on electronic image display or printed image, because they all have ‘pixels’ for representing the images.” (04/04/06). Again, Applicant respectfully disagrees. The geometry of electronic image displays is fundamentally different than that of printed images in a variety of important physical respects.

For example, the pixels in electronic image displays emit light, whereas the elements which the Examiner alleges to correspond to “pixels” in printed images do not emit any light whatsoever. To the contrary, the alleged “pixels” in printed images merely reflect light incident from another light source.

One of ordinary skill in the art would readily discern that there is a fundamental scientific difference between the physical properties of the emission of light by a light source, as compared to the reflection of light which is incident from another light source. In fact, the pixels which emit light in an electronic display are entirely different than the picture elements B and C taught in Momochi that are printed using the thermal head 106 of a sublimation type printer. (Column 5, lines 31-37; column 6, lines 46-49; Figure 2).

In response to Applicant's previous arguments that Momochi fails to teach or suggest a plurality of lenses that reflect light emitted from the pixels, the grounds of rejection allege that "if there is no light from the pixels being refracted by the lenticular lens then there is no way for the stereoscopic image to be viewed." (04/04/06 Office Action, page 13). However, contrary to the grounds of rejection, Applicant has never made any allegations that there was no light being refracted by the lenticular lens taught in Momochi. Quite to the contrary, Applicant merely pointed out that "[l]ight which is incident upon the lens (angle θ) originates from the viewer's side." (12/29/06 Amendment, page 14). That is, Applicant explained that Momochi teaches that the light which is incident upon the lenticular lens therein is emitted from a light source from the viewer's side and is then reflected by the picture elements B and C. Consequently, Momochi does not provide any teaching whatsoever that the picture elements B and C themselves emit light, as recited in claims 1 and 30.

Therefore, the grounds of rejection have still failed to point to any aspect of Momochi that teaches or suggests the feature of a plurality of lenses that refract light emitted from the pixels, as recited in claims 1 and 30. Indeed, if the Examiner decides to persist in these rejections, Applicant respectfully requests that the Examiner provide the requisite factual basis to support the legal conclusion of obviousness. (See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). In particular, Applicant requests that the Examiner provide some evidence to support the allegation that the picture elements B and C themselves emit light, as recited in claims 1 and 30.

In stark contrast to the recitations of claims 1 and 30, Momochi does not teach that the picture elements B and C emit light. In fact, Momochi teaches just the opposite—that refracted

light from another light source is incident upon the picture elements B and C, and is then reflected by the picture elements B and C toward the left eye and right eye of the viewer, respectively. (Column 11, lines 24-55; Figures 10-11 and 13). Indeed, Momochi teaches a lens that is for use with printed images only and the grounds of rejection have not identified any teaching or suggestion in Momochi that would motivate one of ordinary skill in the art to using the printed image lens therein in an electronic display, as recited in claims 1 and 30. Therefore, Momochi clearly fails to teach or suggest all the recitations of claim 1 for *at least* these reasons.

What is more, the secondary Sandor reference fails to remedy the deficient teachings of Momochi. Specifically, Sandor fails to provide any teaching or suggestion whatsoever regarding the feature of a plurality of lenses that refract light emitted from the pixels, as recited in claims 1 and 30. In contrast, Sandor teaches that a lenticular image is printed on the bottom surface of a base substrate 14 and that light which is reflected from the base substrate then passes through the lenses 17. (*See e.g.*, column 7, lines 39-67; Figure 1). Sandor does not teach that any aspect of the image printed on the base substrate 14 emits light, as recited in claims 1 and 30.

Furthermore, Sandor teaches a lens that is for use with printing only and the grounds of rejection have not identified any teaching or suggestion in Sandor that would motivate one of ordinary skill in the art to using the printing lens therein in an electronic display, as recited in claims 1 and 30. In fact, at that time the cited references were made, the narrow-pitch lens was used for printing, so that an electronic display mounted with a narrow-pitch lens had not yet been realized. However, the present invention has been made, under such circumstances, for realizing a high-quality 3D image by using a narrow-pitch lens.

Thus, Sandor fails to teach or suggest all the recitations of claim 1 for *at least* these reasons.

Additionally, Applicant submits that one of ordinary skill in the art would not have been motivated to combine and modify the cited references in the manner proposed by the grounds of rejection. The invention recited in claims 1 and 30 achieves remarkable effects of a high precision lens. According to the invention recited in claims 1 and 30, the width of the light portion and the dark portion in the striped patterns that occur in the three-dimensional image can be set to no more than the resolution of the viewer. Therefore, the viewer can no longer recognize the striped patterns, and reduction in the display image quality caused by using lenses having unevenness on their surfaces can be prevented.

On the other hand, particularly in the cited references, there is no suggestion of a relationship between a lens pitch and 3D visibility. Indeed, the Examiner has also acknowledged that the cited references fail to describe the definition of vision. Since the relationship between a lens pitch and 3D visibility has not been described in the cited references as such, there would not have been any motivation for a skilled artisan to apply the cited references to solving the problem of the present invention.

Finally, the Examiner alleges that the actual size of the pixels and lenticular screen are really matters of design choice to one of ordinary skill in the art, since once the arrangement and relationship for the display device are figured out, plugging in numbers to make a device with the actual desired size is a matter of design choice.

However, Applicant reminds the Examiner that the finding of an “obvious design choice” is precluded when the claimed structure and the function it performs are different from the prior art. (*In re Gal*, 980 F.2d 717 (Fed.Cir.1992)). Here, both the structure recited in claims 1 and 30, and the function it performs are vastly different than the teachings of Momochi or Sandor. As discussed above, neither Momochi, nor Sandor, even remotely suggests the recited structure of an optical unit which consists of a plurality of lenses that refract light emitted from the pixels, as claimed. Further, neither Momochi, nor Sandor, provide any suggestion regarding the function performed by the invention recited in claims 1 and 30, namely, the function of preventing the striped patterns caused by a lens shape from occurring in a three-dimensional image. Therefore, Applicant submits that the finding of an “obvious design choice” is precluded in this case.

Additionally, the Examiner's characterization of the claimed limitation as “an obvious design choice” is merely an unsupported, generalized conclusion, and not a reason or showing, as required to support the rejection, and thus constitutes reversible error. (*See, e.g., Ex parte Garrett*, 33 BNA's Patent, Trademark & Copyright J. 43 (1986) (reporting decision of Bd. Pat. App. & Inter. 9/30/86: Appeal No. 580-81)). As such, the Examiner is requested to supply appropriate objective factual support or to withdraw the rejection.

For *at least* the reasons discussed above, neither Momochi, Sandor, nor any combination thereof, teaches or suggests the feature of an optical unit which consists of a plurality of lenses that refract light emitted from the pixels, as recited in claims 1 and 30. Therefore, Applicant respectfully submits that claims 1 and 30 are patentable over the cited references for *at least*

these reasons. Further, Applicant respectfully submits that claims 5 and 6 are allowable *at least* by virtue of their dependency on claim 1. Thus, Applicant respectfully requests that the Examiner withdraw these rejections.

B. Ichinose in view of Sandor

The Examiner has rejected claims 1, 5-8, 21, 25, 30 and 31 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,987,487 to Ichinose *et al.* (hereinafter "*Ichinose*") in view of Sandor. Applicant respectfully traverses these rejections for *at least* the reasons set forth below.

The grounds of rejection acknowledge that Ichinose does not teach or suggest that the lenticular lens disclosed therein has a lens pitch that is less than 0.2 mm as required by claims 1, 30 and 31. Nevertheless, the grounds of rejection apply the cited Sandor reference, alleging that Sandor teaches or suggests this feature. Further, the grounds of rejection allege that it would have been obvious to one of ordinary skill in the art to apply the teachings of Sandor, to modify the stereoscopic viewing device of Ichinose, so as to arrive at the claimed invention, and that the motivation for doing so would be for the benefit of making the device capable of being handheld and of being applied into portable devices for viewing stereoscopic images in portable and handheld devices.

In Applicant's previous Amendment under 37 C.F.R. § 1.116, which was filed on December 29, 2005, Applicant advanced detailed arguments that one of ordinary skill in the art would not have had any reasonable expectation of success in combining the pixels taught by Ichinose (0.4 mm pitch) with the lenticule pitch taught in Sandor (0.17 mm), since the resultant

combination would not yield stereoscopic viewing. (12/29/05 Amendment, page 16). Indeed, MPEP § 2143 requires that the Examiner must show that there is a reasonable expectation of success in combining or modifying the references. (*See* MPEP § 2143).

However, the 04/04/06 Office Action has not provided any response whatsoever to Applicant's previous arguments in this regard. And, MPEP § 707.07(f) explicitly requires that the Examiner answer all material that has been traversed by the Applicant. More particularly, MPEP §707.07(f) requires that "[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it" (emphasis added). Since the 04/04/06 Office Action has not provided any response to Applicant's arguments that one of ordinary skill in the art would not have had any reasonable expectation of success in combining the pixels taught by Ichinose (0.4 mm pitch) with the lenticule pitch taught in Sandor (0.17 mm), such arguments remain unrebutted and Applicant submits that claims 1, 5-8, 21, 25, 30 and 31 are patentable over the cited references *at least* for the reasons already of record.

In particular, Ichinose specifically teaches that the pitch of the lenticular lens therein is set to slightly smaller than the pitch of the L/R pair, and teaches a lens pitch of 0.3988 mm corresponding to the pixel pair pitch of 0.4 mm. Moreover, Ichinose explicitly teaches away from modifying the pitch of the lenticular lens therein to have a smaller pitch. Indeed, Ichinose teaches increasing the number of components comprising a single pixel, so that the area in the display panel capable of stereoscopic viewing can be expanded over the entire display. (Column 8, lines 49-53). Since Ichinose teaches that it is desirable to increase the number of components

comprising a single pixel, it teaches quite the opposite of decreasing pitch, as proposed by the grounds of rejection. Thus, Applicant submits that one of ordinary skill in the art would not have been motivated to combine the teachings of Ichinose with those of Sandor, for *at least* these reasons.

The only response provided in the grounds of rejection to Applicant's previous arguments that there is no motivation to combine Ichinose and Sandor, is that the actual size of the pixels and lenticular screen elements are matters of design choice to one skilled in the art since once the arrangement and relationship for the display device are figured out, and that to plug in numbers to make a device with the actual desired size is a matter of design choice. (04/04/06 Office Action, page 13). Applicant respectfully disagrees with the grounds of rejection.

Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness and instead makes a general allegation of design choice. Thus, the Examiner's characterization of the claimed limitation of "wherein the lens pitch of said optical unit is less than 0.2 mm," as being an obvious matter of design choice is merely an unsupported, generalized conclusion, and is not a reason or showing, as required to support the rejection, and thus constitutes reversible error. (*See, e.g., Ex parte Garrett*, 33 BNA's Patent, Trademark & Copyright J. 43 (1986) (reporting decision of Bd. Pat. App. & Inter. 9/30/86: Appeal No. 580-81)). As such, the Examiner is requested to supply appropriate objective factual support or to withdraw the rejection.

In addition, Applicant submits that, contrary to the allegations in the grounds of rejection, it would not have been an obvious design choice for a skilled artisan to specifically select a lens

pitch of an optical unit which is less than 0.2 mm, as recited in claims 1 and 30. Quite to the contrary, the feature of a three-dimensional image display device wherein a lens pitch of an optical unit is less than 0.2 mm provides patentable advantages over other conventional display devices which would not be viewed as equivalent to other lens pitches by those skilled in the art. Specifically, by setting the lens pitch of the optical unit to 0.2 mm or less, the width of a light portion and a dark portion in the striped patterns that occur in the three-dimensional image is set no more than the resolution of the viewer, which prevents the viewer from recognizing the striped patterns in the three-dimensional image even when the viewer holds the three-dimensional display device in hand and views the three-dimensional image while the viewer is moving. (Page 8, lines 6-14). Accordingly, Applicant submits that the claimed lens pitch is not merely a design choice, rather it solves a long-felt but unresolved problem in conventional devices and constitutes patentable subject matter.

Thus, Applicant submits that claims 1, 30 and 31 are patentable over Ichinose, Sandor, and any combination thereof, for *at least* these reasons. Applicant also submits that claims 5-8, 21 and 25 are allowable *at least* by virtue of their dependency. Hence, Applicant respectfully requests that the Examiner withdraw these rejections.

C. Ichinose

The Examiner has also rejected claims 2-4, 9-20, 22-24, and 26-28 under 35 U.S.C. § 103(a) as being unpatentable over Ichinose. Applicant respectfully traverses these rejections for *at least* the reasons set forth below.

1. Independent Claim 2

The Examiner acknowledges the Ichinose fails to teach or suggest the features of wherein the normal distance OD (i.e., the optimum viewing distance) is 350 mm or less, and wherein said normal distance OD and said lens pitch L are set so as to satisfy the expression: $L \leq 2 \times OD \times (0.000291)$, as recited in claim 2. Nevertheless, the grounds of rejection allege that since Ichinose generally defines applicable physical equations, it would have been obvious to one skilled in the art to plug in the desired values to design an image display device which satisfies the specific sizes for the benefit of allowing the display devices to be applicable for different application requirements. (04/04/06 Office Action, page 11).

Applicant respectfully disagrees. As explained in Applicant's previous Amendment under 37 C.F.R. § 1.116, which was filed on December 29, 2005, Ichinose teaches that at a distance of 500 mm, the visible stereoscopic area is 64 mm across, about the distance between the average viewer's eyes. (Column 7, lines 36-38; 12/29/05 Amendment, page 17). Thus, Ichinose specifically teaches that the minimum stereoscopic viewing distance is 500 mm. Therefore, Ichinose does not teach, and cannot possibly suggest, that the optimum viewing distance of the device disclosed therein is 350 mm or less. In fact, Ichinose teaches away from the notion of a stereoscopic viewing distance closer than 500 mm in that Ichinose specifically teaches that 500 mm is the minimum viewing distance of the device disclosed therein and suggests expanding the viewing area at the optimum viewing distance of 500 mm by increasing the micropixels in a given L/R pair.

However, the 04/04/06 Office Action has not provided any response whatsoever to Applicant's previous arguments in this regard. And, MPEP § 707.07(f) explicitly requires that the Examiner answer all material that has been traversed by the Applicant. More particularly, MPEP §707.07(f) requires that "[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it" (emphasis added). Since the 04/04/06 Office Action has not provided any response to Applicant's arguments that Ichinose fails to teach or suggest a closer stereoscopic viewing distance of 350 mm or less, and that a skilled artisan would not have been motivated to modify Ichinose to achieve the recited closer stereoscopic viewing distance, such arguments remain unrebutted and Applicant submits that claim 2 is patentable over Ichinose *at least* for the reasons already of record.

Here, the grounds of rejection have summarily alleged that, because Ichinose has defined the general physical equations to be applied, it would have been obvious to a skilled artisan in view of Ichinose to apply these equations to closer observation distances, even though Ichinose explicitly teaches a substantially greater minimum viewing distance of 500 nm. However, even when obviousness is based on a single prior art reference, the Examiner must identify some suggestion or motivation to modify the teachings of that reference. (See In re Kotzab, 55 USPQ2d at 1316-1317 (*citing* B.F. Goodrich Co. v. Aircraft Breaking Sys. Corp., 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996)); *see also* MPEP § 2142 (*quoting* Ex parte Clapp, 227 USPQ 972, 973 (B. Pat. App. & Inter. 1985)) ("To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly

suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references”).

Applicant submits that the conclusory allegations that it would have been obvious to a skilled artisan in view of Ichinose to apply the associated physics equations to closer observation distances is nothing more than an unsupported, generalized conclusion, and does not constitute the factual basis required to support the rejection. (*See In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). In fact, one of skill would have to ignore the explicit teachings of Ichinose (i.e., that the minimum viewing distance is 500 mm) to make the modifications proposed in the grounds of rejection.

Further, although the Examiner has mentioned that D could be either at the minimum distance in the three dimensional visible range, or at the optimum viewing position (Page 11, lines 4-5 of 04/04/2006 Office Action), the present invention is effective not only when D (OD) is the minimum distance in a three-dimensional visible range, but also when it is the maximum distance. Namely, according to the present invention, visibility is improved by OD satisfying 350 mm or less.

Finally, the Examiner has acknowledged that the fly-eye lens is not described in the cited references, but the use thereof can be easily conceived. (Page 12, lines 4-6 of 04/04/2006 Office Action). However, Applicant submits that the fly-eye lens has an effect that display quality can further be improved since the lens pattern can be finely regulated vertically and horizontally. The fact that such an effect is well-known has not been disclosed anywhere in the cited references.

Therefore, Applicant respectfully submits that claim 2 is patentable over Ichinose for *at least* these reasons. Further, Applicant submits that claims 9-12, 22 and 26 are patentable *at least* by virtue of their dependency on claim 2.

2. Independent Claim 3

The Examiner acknowledges the Ichinose fails to teach or suggest the feature of wherein the lens pitch of said optical unit is 0.124 mm or less, as recited in claim 3. Nevertheless, the grounds of rejection allege that since Ichinose generally defines applicable physical equations, it would have been obvious to one skilled in the art to plug in the desired values to design an image display device which satisfies the specific sizes for the benefit of allowing the display devices to be applicable for different application requirements. (04/04/06 Office Action, page 11).

Applicant respectfully disagrees. As explained in Applicant's previous Amendment, Ichinose specifically teaches a lenticule pitch of 0.3988 with a L/R pixel pair pitch of 0.4 mm. But, Ichinose fails to provide any teaching or suggestion whatsoever regarding an optical unit with a lens pitch of 0.124 mm or less, as recited in claim 3, nor have the grounds of rejection identified any aspect of Ichinose that suggests this feature. In fact, Ichinose explicitly teaches away from close stereoscopic viewing provided by high definition, closely packed pixels and a lens pitch of 0.124 mm or less in that Ichinose suggests increasing the number of micropixels for each R and L pixel so that the stereoscopic viewing area can be expanded to the entire display. (Column 8, lines 49-53).

However, the 04/04/06 Office Action has not provided any response whatsoever to Applicant's previous arguments in this regard. And, MPEP § 707.07(f) explicitly requires that

the Examiner answer all material that has been traversed by the Applicant. More particularly, MPEP §707.07(f) requires that “[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant’s argument and answer the substance of it” (emphasis added). Since the 04/04/06 Office Action has not provided any response to Applicant’s arguments that Ichinose fails to teach or suggest the feature of wherein the lens pitch of said optical unit is 0.124 mm or less, as recited in claim 3, and that a skilled artisan would not have been motivated to modify Ichinose to achieve the recited smaller lens pitch, such arguments remain un rebutted and Applicant submits that claim 3 is patentable over Ichinose *at least* for the reasons already of record.

Here, the grounds of rejection have summarily alleged that, because Ichinose has defined the general physical equations to be applied, it would have been obvious to a skilled artisan in view of Ichinose to apply these equations to achieve the recited lens pitch of 0.124 mm or less, even though Ichinose explicitly teaches a substantially greater lens pitch of 0.4 mm. However, even when obviousness is based on a single prior art reference, the Examiner must identify some suggestion or motivation to modify the teachings of that reference. (See In re Kotzab, 55 USPQ2d at 1316-1317 (*citing* B.F. Goodrich Co. v. Aircraft Breaking Sys. Corp., 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996)); *see also* MPEP § 2142 (*quoting* Ex parte Clapp, 227 USPQ 972, 973 (B. Pat. App. & Inter. 1985)).

Applicant submits that the conclusory allegations that it would have been obvious to a skilled artisan in view of Ichinose to apply the associated physics equations to achieve the recited lens pitch of 0.124 mm or less is nothing more than an unsupported, generalized conclusion, and

does not constitute the factual basis required to support the rejection. (See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). In fact, one of skill would have to ignore the explicit teachings of Ichinose (i.e., that the lens pitch is 0.4 mm) to make the modifications proposed in the grounds of rejection.

Therefore, Applicant respectfully submits that claim 3 is patentable over Ichinose for *at least* these reasons. Further, Applicant submits that claims 13-16, 23 and 27 are patentable *at least* by virtue of their dependency on claim 3.

3. Independent Claim 4

The Examiner acknowledges the Ichinose fails to teach or suggest the features of wherein said distance ND is 213 mm or less, and wherein said distance ND and said lens pitch L are set so as to satisfy the expression $L \leq 2 \times ND \times (0.000291)$. Nevertheless, the grounds of rejection allege that since Ichinose generally defines applicable physical equations, it would have been obvious to one skilled in the art to plug in the desired values to design an image display device which satisfies the specific sizes for the benefit of allowing the display devices to be applicable for different application requirements. (04/04/06 Office Action, page 11).

Applicant respectfully disagrees. As explained in Applicant's previous Amendment, Ichinose specifically teaches that the minimum stereoscopic viewing distance is 500 mm. Therefore, Ichinose does not teach, and cannot possibly suggest, that the optimum viewing distance of the device disclosed therein is 213 mm or less, as recited in claim 4. In fact, Ichinose teaches away from the notion of a stereoscopic viewing distance closer than 500 mm in that Ichinose specifically teaches that 500 mm is the minimum viewing distance of the device

disclosed therein and suggests expanding the viewing area at the optimum viewing distance of 500 mm by increasing the micropixels in a given L/R pair.

However, the 04/04/06 Office Action has not provided any response whatsoever to Applicant's previous arguments in this regard. And, MPEP § 707.07(f) explicitly requires that the Examiner answer all material that has been traversed by the Applicant. More particularly, MPEP § 707.07(f) requires that "[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it" (emphasis added). Since the 04/04/06 Office Action has not provided any response to Applicant's arguments that Ichinose fails to teach or suggest a closer stereoscopic viewing distance of 213 mm or less, and that a skilled artisan would not have been motivated to modify Ichinose to achieve the recited closer stereoscopic viewing distance, such arguments remain un rebutted and Applicant submits that claim 4 is patentable over Ichinose *at least* for the reasons already of record.

Here, the grounds of rejection have summarily alleged that, because Ichinose has defined the general physical equations to be applied, it would have been obvious to a skilled artisan in view of Ichinose to apply these equations to closer observation distances, even though Ichinose explicitly teaches a substantially greater minimum viewing distance of 500 nm. However, even when obviousness is based on a single prior art reference, the Examiner must identify some suggestion or motivation to modify the teachings of that reference. (See In re Kotzab, 55 USPQ2d at 1316-1317 (*citing B.F. Goodrich Co. v. Aircraft Breaking Sys. Corp.*, 72 F.3d 1577,

1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996)); *see also* MPEP § 2142 (*quoting* Ex parte Clapp, 227 USPQ 972, 973 (B. Pat. App. & Inter. 1985)).

Applicant submits that the conclusory allegations that it would have been obvious to a skilled artisan in view of Ichinose to apply the associated physics equations to closer observation distances is nothing more than an unsupported, generalized conclusion, and does not constitute the factual basis required to support the rejection. (*See In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). In fact, one of skill would have to ignore the explicit teachings of Ichinose (i.e., that the minimum viewing distance is 500 mm) to make the modifications proposed in the grounds of rejection.

Therefore, Applicant respectfully submits that claim 4 is patentable over Ichinose for *at least* these reasons. Further, Applicant submits that claims 17-20, 24 and 28 are patentable *at least* by virtue of their dependency on claim 42.

VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment under 37 C.F.R. § 1.111
U.S. Serial No.: 10/787,128

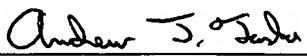
Attorney Docket No.: Q80097

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER



Andrew J. Taska
Registration No. 54,666

Date: August 4, 2006